



NOVEMBER 1986

COLORADO SPRINGS,  
COLORADO

Pikes Peak Radio Amateur Association, Inc.  
P.O. Box 78521  
Colorado Springs, Colorado 80945

FIRST CLASS MAIL



# Ø BEAT



## P.P.R.A.A. DIRECTORS

PRESIDENT  
V. PRESIDENT  
SECRETARY  
TREASURER  
Board Member  
Board Member  
Board Member  
Board Member

* Don Hohisel KEØGJ 1207 Whitehouse Dr. 80904	520-9955
Don Ross NL7CO 4425 Cassity St. 80911	390-4419
* Al Vrooman NØCMW 1341 Diana Ln. 80909	473-1660
* Bud Libengood NØDDF 1596 Westmoreland Dr. 80907	599-7699
* Jim Sorrells WA9ABB 6575 Lange Dr. 80918	598-7543
Phil Somers VE1ARC 1075 Allegheny Dr. 80919	590-7136
Ron Deutsch NKØP 6050 Del Paz Dr. 80918	593-8352
Chris Smith WBØDHU P.O. Box 16397 80935	495-0624

\* Denotes 2 year term beginning October 1986

**ZERO BEAT** is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. Cost is 50¢ per month for non-members or a \$4.00 per year subscription. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at Giuseppe's Depot Restaurant at 10 S. Sierra Madre at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Phil Somers VE1ARC, 1075 Allegheny Dr. Colorado Springs, CO 80919 590-7136



```
#####
#
#   HAM RADIO SATURDAY BREAKFAST
#
#   Start your Saturday off right by
#   joining your ham friends for
#   breakfast and rag-chewing.
#
#   PLACE: Village Inn Pancake House
#           Academy and Palmer Park
#
#   TIME:  Approximately 7 AM - 9 AM
#           Some earlier - some later.
#
#   FREQ:  146.52 plus local repeaters.
#
#   We often have up to 40 people attend
#   from a variety of clubs in the area.
#   You need not be a member of any to
#   attend. All are welcome and urged to
#   join the fun. See you on Saturday.
# #####
```



"VIEW FROM THE PEAK"  
by George Hinds, N8CIX/Ø

FCC SHOOTS DOWN 6-METER PROPOSAL

Word from the FCC is that the idea proposed by W6TNS to create a new digital radio service in a portion of the 6-meter band has been rejected. Well done!

However, at the same time, for reasons not stated, the Commission tossed out the bone for computer hobbyists to look around for a different bit of spectrum such as portions of the 902 to 928 MHz band.

So, they take a step in the right direction for amateur radio in one decision, then turn right around and take a swing at amateurs in the next!

TO VE7 LAND ONCE MORE

Not having had enough of EXPO 86 at Vancouver, BC, on the first trip in May, away we went again in late September. I used logic in planning this trip: obviously, the crowds we encountered earlier would be gone now: kids back in school, summer vacationers back home and the October 13 end of EXPO in sight should be reducing attendance to a minimum. No more long lines. Right?

WRONG! WRONG! Where did I get such a crazy idea? It was perhaps even worse than earlier: on one Sunday of our visit over 225,000 people went through the gate and the 20 millionth visitor entered. By the way, that couple won a trip to the 1988 Worlds Fair in Australia. Our timing was off that day - no "down under" free trip for us.

VE7EXPO, the official Amateur Radio Station of EXPO 86, was still going "full steam ahead" when I again visited it this trip. Located on the main floor of the Canada Pavilion at the Burrard Inlet EXPO site, the station was operating from 160 meters through 1.2 GHz with the very top line equipment by ICOM.

The antennas were mounted under the "sail type" teflon roof of Canada Place. VE7EXPO was monitoring the Vancouver repeaters of VE7RPT: 146.94; 224.30; 443.525. To make sure that I got my QSL card for contacting the station, I asked

for it on the spot: it's a beautiful card and one that those who were so fortunate as to contact the station will prize highly.

Vancouver has 10 repeaters on 2 meters that are usually accessible by a handheld rig anywhere in the metro area; in addition, there are 13 more accessible repeaters on 2M by those running moderate power such as the usual mobile rig. For those with 220 FM, there is one repeater. And for the 440 ham, there are 3 local systems. Victoria, about 30 miles away to the west on Vancouver Island across the Straits of Georgia also has a number of repeaters available from the mainland.

There is a linked repeater system on 2 meters that covers Vancouver Island and the southern interior of British Columbia that includes nine (9) repeaters. This network is available to all amateurs and can be activated upon request. It reaches to the very tip of Vancouver Island and as far east as Kamloops.

VE7RPT 2 meters is the "primary" repeater for emergency and public service in the Vancouver area. More than 40 fire and police and ambulance departments can be direct dialed on its open autopatch by using the published access and speed dial procedures for the agencies served.

Further, this open system provides speed dialing to such service telephones as the BC AAA, the BC Ferries schedules, road conditions, general weather forecast plus the aviation and marine weather numbers. This complete system is on the .94 repeater, which is intended to be used for short contacts, priority traffic and autopatches.

The club maintains another 2 meter repeater intended for those who wish to "rag-chew" - it is on 147.02 out (+600) and the call is VE7RAG. What a call! The formal name of the sponsoring club is the "BCFM Communications Association."

If you contacted the EXPO 86 station on any band and wish to request a QSL card, you can write to:

VE7EXPO QSL Manager,  
P. O. Box 80555  
South Burnaby, B.C. V5H 3X9

73, de N8CIX

## HAM LICENSING

VE Program, Colorado Springs

VE testing for the purpose of obtaining or upgrading an Amateur Radio Station /operator license, sponsored by the Pikes Peak Radio Amateur Association, will be conducted on Nov 15, 1986 at the First United Methodist Church located at 420 N. Nevada Ave., Colorado Springs, starting at 9:00 A.M. PRE-REGISTERED applicants and WALK-INS are welcomed.



### I STOLEN EQUIPMENT !

The following is a list of items stolen from AD6D in a burglary which occurred October 28. If you are planning on going to any garage sales or flea markets, I would appreciate it if you would take this list along and contact the police if you spot any of these items. Refer to El Paso County case no. 86-4694.

Thanks - Tom, AD6D

Description Manufacturer Model Serial No

Transceiver Kenwood TB-8308 2030466  
Bat Charger Kenwood for TR-2400  
NICAD Battery Pack Kenwood for TR-2400

#### Integrated Stereo System Technics

Amplifier Technics SUV95 FA6507B-279  
Tuner Technics 9TS75KM FM632B240  
Tape Deck Technics R9T25 FM6320B240  
Turntable Technics 8LBD25U MG6603A855  
Speaker Technics 8B2683 HF6619A610  
Speaker Technics 9B2683 HF6619A624  
Cabinet Technics SH594B  
Equalizer Technics SH8029 MA6422B264  
Compact Disc Technics BLP105 AA6623A448  
Port. Computer Osborne One

(w/DD Discs) CA127209

Modem Osborne Compaq  
80 column display Osborne option  
NOTE: Late model gray case version  
Printer DEC LA-50 Serial TC47144A  
NOTE: Missing Carriage Cover  
Gray Printer cable Homemade RS-23.  
Beige Printer cable Homemade RS-232  
NOTE: Both printer cables have no connector covers  
Personal Computer Homemade see below:  
Keyboard Maxiswitch 9T4119A 9T41191A ?  
NOTE: Keyboard is off-white, or cream  
Cabinet Taiwan XT style  
NOTE: Cabinet color similar to monitor and keyboard, but it has a greenish hue  
Monitor Samsung MD1254G 60401651  
NOTE: Monitor color is off-white, or cream  
Motherboard ACS 1000  
Hard disc Everex/Seagate 9T-225  
Floppy disc drive Toshiba MPX4650955  
Floppy disc drive Toshiba MPX4650880  
Graphics controller Taiwan  
Power supply Taiwan 135 watt  
Memory (27 DRAMS) Intel ? 41256  
Cables (4) PCR internal  
Memory (2 EPROMS) Intel 27256  
VCR GE JVC R5010X 6R1R59314

PPRAA  
CHRISTMAS DINNER  
IRON SPRINGS  
CHATEAU  
12 DECEMBER  
DINNER AT 6:00PM  
SHOW AT 8:30 PM  
ADULTS \$16  
KIDS \$9.50  
POC: RICK WB7THT

# VHF AND ABOVE NEWS

by NKØP

In August 3rd a new record was reported on 3456 MHz. The 16 year old record was broken by WA5TNY, KA5JPD, & N5MP. The new distance claimed is 228 mi., mode was Tropo scatter with 5-5-9 signal reports.

The TAURIDS meteor shower will peak on 11-2-86 at 1723 GMT +/- 12 hours for about 20 days.

Finally someone reinvented the "HALO" or more accurately the "SQUALO". OGM PRODUCTS has available a small lightweight, horizontally-polarized mobile antenna for 144, 220, and 432 mobile SSB operation. (the prices are very reasonable) for info write OGM PRODUCTS 1823 Oak Park Berwyn, Ill. 60402

The LEONIDS meteor shower will peak on 11-17-86 at 0829 GMT +/- 12 hours for 3 hours.

Wonder what grid square your in?? Here is a short program to compute it!!

GRID SQUARE PROGRAM

```
10 Print "Enter Longitude;"
20 GOSUB 180:G=G+180/M/60
30 N=INT(G/20):T$(1)=CHR$(N+65)
40 T$(3)=CHR$(INT((G-20*N/2)+48))
50 IF INT(G)=2*INT(G/2) THEN EV=1
60 IF M>0 AND EV=0 THEN M=M+60
70 IF M<0 THEN M=120+M:IF EV=1
   THEN M=M-60
80 T$(5)=CHR$(M/5+65)
90 Print "Enter Latitude:"
100 GOSUB 180:G=G+90+M/60:M=M+S/60
110 N=INT(G/10):T$(2)=CHR$(N+65)
120 T$(4)=CHR$(INT(G-10*N)+48)
130 IF M<0 THEN M=60-M
140 T$(6)=CHR$(INT(M/2.5)+65)
150 FOR N=1 TO 6:Q$=Q$+T$(N):NEXT
160 Print "INTERNATIONAL QTH LOCATOR: "Q$
170 END
180 INPUT "DEGREES: ";G
190 INPUT "MINUTES: ";M
200 INPUT "SECONDS: ";S:RETURN
```

All west longitudes as well as all south Latitudes must be entered as negative values! Thats all for now 73's and C U on the bands! RON NKØP

## CONGRATULATIONS

NEW NOVICES AS OF 11 SEPT 1986

KAØYU Andre Clair 4775 Ridenour Dr 80916  
KAØYME John Leach 7455 Delanniro Dr 80919  
KAØYKF Walter Scott PO Box 38698 80937.



## COLORADO SPRINGS Walker Electronics Inc

2838 N. PROSPECT, COLORADO SPRINGS, CO 80907  
PHONE — (303) 536-1661

WHOLESALE DISTRIBUTORS OF ELECTRONIC  
PARTS, SUPPLIES AND EQUIPMENT

ELITECH  
HUSTLER  
CUSHCRAFT  
LARSEN  
KATEX  
UNIDEN

WELLER  
FLUKE  
BELDEN  
AMPHENOL  
MFI  
B & W

ARRL BOOKS  
SAMS BOOKS  
TRIPLITE (power supplies)  
VAN GORDEN  
BENCHER

## NOVEMBER MEETING

The next regularly scheduled meeting of the Pikes Peak Radio Amateur Association will be held on Wednesday, November 12 at 7:30 PM at Giuseppe's Depot at #10 S. Sierra St. The program will be "AMATEUR RADIO POTPOURRI" by Ron - NKØP and Chris - HBØDHU.

## NO MEETING IN DECEMBER

see info on Christmas Party

AH6AP AH6AP AH6AP AH6AP AH6AP AH6AP AH6AP

A	FOR SALE	A
H		H
6	Hy-Gain 3-elw 15 meter beam \$60.	6
A		A
P	Webster 75 & 40 meter mobile antenna \$25.	P

A		A
H	Sony Reel-to-Reel tape player \$50.	H
6		6

A	WANTED	A
P		P

IC-730 & ICOM 3200A Duo-Bander

A		A
H	call Myron, AH6AP	H
6		6
A	634-3280	A
P		P

AH6AP AH6AP AH6AP AH6AP AH6AP AH6AP AH6AP



ANTENNAS  
by Chris Smith  
WBØDHU

Can this antenna be saved? No doubt this question was on Don Hohisels's mind when he gave me a call. After all, he had gone to considerable effort to put up his inverted vee, but it appeared that somewhere things took a wrong turn. In a display of the contrary nature of antennas and other misfits of Murphy, it refused to tune up. Not just on some favored band, as would be expected if mere rotten luck were at fault; no, it wouldn't tune up on any band Don could work.

In that coincidence, there was a hint of the root of the problem and thus the solution. But first, the puzzle must be laid.

Don's inverted vee was of respectable size for a multiband antenna. In round numbers, it was 40 feet high at the center, 65 feet on a side and 8 to 10 feet off the ground. It was laid out in a vertical plane, more or less, and fed in the traditional manner with open wire line. The open wire line was of the "ladder line" type with polyethylene spacers molded in, resembling jumbo size TV twin lead with square holes punched in it with a 50% "duty cycle." He figured he had 55 feet of it running to a Johnson "matchbox."

For those too young to remember, a Johnson Matchbox is one of the many fine tuners of the fifties, employing the now little seen technique of "link coupling" and made to order for balanced, open wire line. Open wire line, and the associated antennas with names like "Zepp," "double Zepp" and even "extended double Zepp" were familiar to hams of past decades, but are little seen today, most likely because they work too well and cost too little to be attractive to the manufacturers of the eighties.

Now I'd like to tell you of how I digested all of the above information, fed it into my computer, and performed arcane recursive analyses, finally divining the problem and shouting "eureka!" as I rushed off to phone the good news to Don. But I won't, because it would be a lie, and besides, the truth will probably enhance my "rep" even more. (Let's face it, the pay for writing a column is lousy, so

those who do so are most likely seeking other forms of ego-gratification.)

I knew Don was a conscientious builder and didn't ask him an obviously demeaning question like "you didn't short out the center insulator or something like that, did you?" at least until it occurred to me later. Now shooting from the hip via the mouth (a bad habit of mine) I suggested that he try a different feeder length, perhaps changing it by an eighth of a wave at 80 meters, or 30 feet. Well he did shorten it by about 12 feet, by pulling out the slack. It then tuned up fine, on "all" the bands. I later did some analysis to show why it worked, which I will show below. But one clue was in it not working on "all" bands, 80 through 10. By most traditional ham standards, this means the harmonically related ham bands 3.5, 7.0, 14.0, 21.0, and 28.0 MHz. Because of this relationship, and the habit of transmission lines of repeating impedances every half-wave, a feeder length that "swings" a "bad" impedance on 80 meters through to the shack is prone to do so the rest of the traditional ham bands. Curiously, the new band at 10 MHz is just in between 40 and 20, and in such cases will often work well. Somehow, don't think Don is set up to work on 10 MHz!

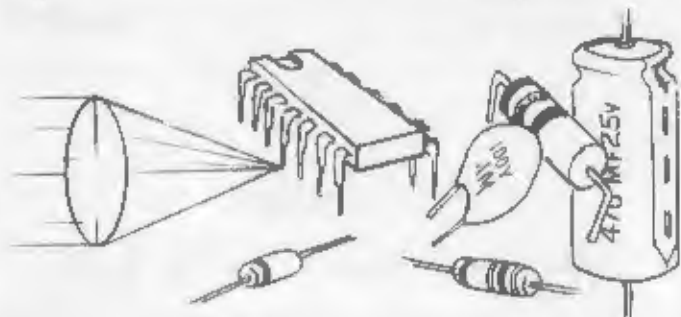
Table 1 below will summarize the details. I modeled his antenna on a computer program called MININEC3 and added the effects of his transmission line before and after the change. The thing to note is that the "before" column shows all very high resistances (except on 10 MHz) which are beyond the range of even the venerable "Matchbox" to tune. The "after" column shows much more reasonable resistances, quite likely to be within the capabilities of most tuners to tune.

TABLE 1			
FREQ.	ANT. Z	LENGTH=55'	LENGTH=43'
3.6	24-j6	3711+j4222	258-j1395
3.8	31+j87	4002-j3306	162-j934
7.1	1954-j2580	5631-j346	81-j504
10.0	88.5-j461	138+j659	240-j945
14.2	3632+j685	1928+j1854	57-j115
21.2	2279+j742	1444+j1216	95+j189
28.5	2264-j622	1262+j1180	386+j790

# OE PARTS INC.

204 Mount View Ln., Unit 1  
Colorado Springs, CO 80907  
303-531-9515

**Optical - Electronical - Mechanical Parts**  
**Buy - - Sell - Trade - New & Used Surplus Items**



**SEE DICK PEACOCK OR BOB TAYLOR**  
**WAYPL**  
**20% OFF WITH THIS AD**

Of course, these figures are estimates based on the approximate dimensions given. They do illustrate the problems associated with "resonant" line lengths and harmonically related bands. No doubt the ham of the fifties was much more aware of such problems than we are today. Yet the problem still remains, as does the cure - try a different line length.

## BASIC Programs on W80BLV Packet BBS

SMITH.BAS	4124	BEAMHEAD.BAS	19K
INTERMD2.BAS	4759	1KRES.BAS	963
BRMATCH.BAS	6921	COIL8.BAS	6459
COMBLINE.BAS	2685	DEBUG1.BAS	377
DEBUG2.BAS	723	DIPOLE.BAS	4186
FILTER1.BAS	6560	HELICAL.BAS	4769
HYGAIN.BAS	383	IMPEDNCE.BAS	823
INDUCTOR.BAS	2969	INTERMOD.BAS	3787
MATCH.BAS	2901	MICRO-T.BAS	1233
MICRO.BAS	4741	NETWORK.BAS	13K
OP-AMP.BAS	1942	OPTIMUM.BAS	2764
PADS.BAS	3977	S-TO-Y.BAS	3171
SOONVERT.BAS	1341	STRIP-W.BAS	1155
Z-LINE.BAS	1725	CWREV.BAS	3429
INTERMD3.BAS	2659	RADPOWER.BAS	4310
BEGSYN.BAS	12K	SMITH.DOC	1815
CWRCV.HLP	1152	PBS.TX1	1038

## KANTRONICS WATCHDOG TIMER from W80BLV Packet BBS, Colorado Springs

From Kantronics, I requested and received a circuit for a watchdog timer for the KPC series of TNCs. For an SASE, I will gladly send you a copy of this worthwhile circuit. The circuit only uses a 555 timer IC and a couple transistors, but it is a worthwhile addition to the Kantronics TNCs. I constructed the entire thing in an hour and installed it in my KPC-2. Works great!!!!

My address is as follows:

W0LJF  
Ed Wright  
3295 Tucson Street  
Aurora, Colo. 80011

PS: Version 2.3 firmware is now available from Kantronics.

Editor Note: I have sent for this circuit and will put it in *Q-Beat* when received.

## PK-232 FIX

Does your new PK-232 lose its memory after you power it off? Did you install the batteries? If the answer to these questions is yes, install a 10 UF capacitor between pin 6 and pin 7 of U16. The cap is an electrolytic whose plus lead goes to pin 6. Pin 7 is ground, therefore, it will be easier to pick up the ground connection at another chip.

This is an approved AEA modification. I received it from AEA on Friday Oct 17. The cap delays a trigger which corrupts the CPU on power up. This results in the default values from ROM being loaded.....

Good Luck, KE6LT.

## Got an Old SWL Receiver ???

Ron N00P has volunteered to restore old SWL receivers for donation on behalf of the PRRAA to local nursing homes. If you have a SWL receiver in any condition, working or not, and would be willing to donate it to this worthy cause, please contact Ron at 593-8352. Thanks.

EDUCATION  
Don - NL7CO

It has been a real busy month since the last report. The Club's Novice Class has started with an average attendance of 25-30 people with some of those being Novices "recapturing" their skills. Much thanks to KE0BJ, N0DDF, N0CMW, KA0NLI, K0TER and KC0NC for their moral support and instruction. Many more members stopped by to help - Thanks.

Jim, WA9ABJ has restarted his course at the Colorado School for the Deaf and Blind. I think he is looking for assistance.

We are still looking for instructors for a Technician/General class starting in the first part of January. If you are willing to give a little back to this wonderful hobby of ours, then please contact Don NL7CO or Al N0CMW.

That's it for this month. Remember, the Club's goal is 100 new Novices and 50 new Technicians before 1 October 1987.

Vy 73 ... Don NL7CO

Examination Questions

1. How often must a station identify?
2. For a 15 minute QSO, what is the least number of IDs required?

(answer elsewhere in O-Beat)

```

*****
&
$      CHRISTMAS PARTY RAFFLE      &
&
&      Kenwood 21AT                &
&      Shirt-pocket 2m HT with TT pad &
&
&      Purchased from Miley's Radio &
&      with discounts through      &
&      Miley's and Ross Distribution. &
&
&      This support from a very valued &
&      advertiser is much appreciated. &
&
*****

```

PPRAA FINANCIAL REPORT  
Oct 9, 1985 to Oct 8, 1986

INCOME

Donations	\$ 300.00
Membership Dues	1,221.00
ARRL Dues	215.00
O Beat Advertising	611.00
O Beat Subscribers	12.00
Miscellaneous	134.75
Christmas Drawing	136.45
Swapfest	<u>2,026.96</u>
TOTAL	\$4,657.71

EXPENSES

ARRL Dues	\$ (215.00)
O Beat	(1,198.75)
O Beat Postage	(367.06)
Insurance	(287.00)
VE Testing	(18.35)
Miscellaneous	(237.22)
Christmas Drawing	(141.75)
Home Brew Night	(35.00)
CCARC	(15.00)
Education	*(323.48)
Field Day	(228.75)
Picnic	(170.45)
Pikes Peak Hill Climb	(41.66)
Swapfest	(1,056.68)
Trailer	<u>(142.88)</u>
TOTAL	(\$4,479.03)

\* Includes \$180.00 for books  
Donated to Pike's Peak Library

Club balance as of 10/9/85	\$1,656.72
Income 10/9/85 - 10/8/86	<u>\$4,657.71</u>
Working Capital	\$6,314.43

Expenses	(\$4,479.03)
----------	--------------

Club Balance as of 10/8/86	<u>\$1,835.40</u>
----------------------------	-------------------

This financial report has been compiled from the financial record book and cross-referenced to the club check book.

Bud Libengood  
Treasurer



Rocky Mountain Area's  
largest distributor of  
**HAM GEAR**

DRAKE  
YAesu  
KIMPRO  
HY-GAIN  
BENCHER

MIRAGE  
LARSEN  
CUSHCRAFT  
ANTENNA SPECIALISTS  
HUSTLER

DAIWA  
VIBROPLEX  
PALOMAR  
ROHN  
WM. NYE  
B & W



GEORGE  
KDØRW

RUTH  
WBØPY

**Electronic Sales Co.**  
**800 Lincoln Street 832-1111**  
In Colo.-1-800-525-6342

**MINUTES OF OCTOBER GENERAL MEETING**  
submitted by Al NØCMW, secretary

The general meeting of the Pikes Peak Radio Amateur Association was held at Giuseppe's Old Depot Restaurant, Wednesday evening 9 October 1986. The meeting was called to order by the president Les KCØNC at 19:30. We had 40 members and 5 guests present. The minutes of the last meeting were approved as printed in Ø-Beat.

**— MOVING —**

**GATEWAY ELECTRONICS INC. OF COLORADO**  
**IS MOVING FROM 1035 CHEROKEE ST.**  
**TO**

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*  
\*\* GATEWAY ELECTRONICS \*\*  
\* "Gateway's Got It !" \*  
\* 5115 N. Federal Blvd, # 32 \*  
\* Denver, CO 80221 \*  
\* This coupon worth \$2.00 off next \*  
\* \$15.00 purchase. \*  
\* \*  
\*\* Call 458-5444 for info/directions \*\*  
\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

Committee Reports

Treasurer - Bud NØDDF: Previous balance of \$2194.56, income of \$181.80 with expenses of \$540.96, leaving a balance of \$1835.40.

Interference - Ron NKØP: Nil.

SwapFest - Jim WA9ABB: 3rd weekend in May.

Teller County Hill Climb - Doc WØMCT: Thanks to the volunteers. It went really well. Lots of excitement.

Pikes Peak Hill Climb - Malcolm - KE9B: Will start planning in January.

Education - Don NL7CD: Novice classes will start Oct 15 and run approx. 6 weeks, end on Nov 26. Place: civil defense meeting room below main police station from 7:00 pm til 9:15 pm, on Wed and Fri.

Publicity - Ron NKØP: It takes 2 weeks lead time for the newspapers so allow 3 weeks for your announcements.

Colorado Council of Amateur Radio Clubs (CCARC) - Bud NØDDF: Nil.

Deaf and Blind School - Jim WA9ABB: Still working with the school.

Ø-Beat - Phil VE1ARC: Nil.

ARES - Jake NØCYR: Thanks for those who helped with the drill and those who took part and stood by during the Red Tag disaster. Have antennas on all hospital but Eisenhower.

Old Business:

Library Books - Al NØCMW: ARRL has shipped one set of the library books we ordered. (Note: both sets have been received 10 17 86)

Christmas Party - Rick WB7THT: Party Dec 12, 1986. See Rick for reservations.

Raffle - Don KEØGJ: Kenwood 21MT (shirt pocket 2m) to be given away at Christmas party.

Homebrew Nite: Get your projects done for the January meeting.

ARES Applications - Jim WA5SKK: See Jim to join ARES.

Packet - Bdale N3EUA: Bdale is experimenting with packet protocols and needs someone with a TNC-2 and IBM compatible to run some tests.

#### Annual Election of Officers:

President	Don	KE0GJ
V. President	Don	NL7CO
Secretary	Al	N0CMW
Treasurer	Bud	N0DDF
Board Member	Jim	WA9ABB
Board Member	Phil	VE1ARC
Board Member	Ron	NK0P
Board Member	Chris	WB0DHU

Prizes - Don NL7CO: Winners were:

KC0NC	Les	\$10 Walker cert.
KC0TQ	Harley	\$10 Centennial
W0MCT	Doc	won before: tnx
KA7NNX	Susan	Organizer trays
N0LA	Pete	Screwdriver set
no call	Rick	Solid State Design
KA0ROY	Rene	Screwdriver set

#### MINUTES OF OCTOBER BOARD MEETING

submitted by Al N0CMW

The board meeting was held on Monday, 13 October 1986 at the home of Jim, WA9ABB. Those in attendance were Don KE0GJ, Les KC0NC, Al N0CMW, Jim WA9ABB, Bud N0DDF, Phil VE1ARC, Don NL7CO, Chris WB0DHU, and Ron NK0P.

We received a copy of the ARRL comic book, with application for school teachers to take part. Ron NK0P will make some copies and will contact District 20. On Novice classes, we have had about 60 inquiries. We will have "Tune in World" course book available for students to buy, or will loan to those who can not buy a book. Will try to have a Tech/General class starting in Jan. We want to be able to put the new Novices with an Elmer after they get their license.

We have to spend \$420.40 by the end of the year, to be in compliance with state law for raffle.

Motion was made and passed to buy 3 rubber stamps to mark the library books donated by the PPRAA.

## Centennial ★ ★ RCA ELECTRONICS

2324 East Bijou, Colorado Springs, CO 80901  
PHONE: (303) 633-4666

**COLUMBIA**  
ELECTRONIC CABLES

**Weller Xcelite®**

**SPRAGUE**

**GC**  
ELECTRONICS

**SIMPSON METERS**

Chemtronics Inc.,

**SOAR** & **VIZ**

Mfg. Co.

TEST INSTRUMENTS

**TECH**  
**SPRAY**

**ARRL**

Largest Supply of Electronic Parts  
In Southern Colorado

Howard W. Sams

**TAB BOOKS**

Motion made and carried to give Jake N0CYR \$100.00 towards antenna purchase for the local hospitals. Formal presentation of antenna planned for publicity.

Motion made and carried to advance the SwapFest committee \$200.00. Board decided to renew the state license for raffle for 1987. A preliminary contact was made with the manager of Rustic Hills. He is going to set up a meeting between our people and his activity group for SwapFest planning.

It was decided to pass the hat for the hard working waitresses or waiters at Biuseppa's each meeting night.

A motion was made to give the RFI chairman \$50 to purchase bits and pieces for the RFI kit.

Anyone with Club property is asked to contact Don NL7CO for inventory taking.

The November program will be "Amateur Radio Potpourri" by Ron NK0P and Chris WB0DHU. All of the novice class will be invited to attend.

Place for next board meeting will be announced prior to next General Meeting.

#### Answers to Exam Questions

1. A station must ID at the end of every 10 minutes, and at sign-off.
2. Two.

OCTOBER PRIZE WINNER OF \$50 GIFT CERTIFICATE  
LARRY KEØIM NEXT DRAWING SATURDAY NOV. 29



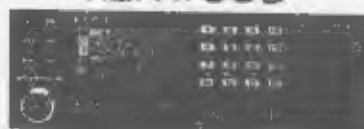
## COLORADO COMM CENTER

KENWOOD



TS-440S

KENWOOD



TM-2550

YAESU - QUATRON - ASTRON - LARSEN - ICOM - MFJ  
HY-GAIN - KDK - CUSHCRAFT - HUSTLER - MIRAGE  
BUTTERNUT - KANTRONICS - ALINCO - AEA - WELZ  
AMERITRON - B&W - AMP SUPPLY - COMMSPEC - THL  
VANGORDAN - ARRL

ICOM COMMERCIAL  
AVANTI - J.I.L.  
TRANSCOMM  
DAIWA

WE TRADE!

DOOR  
PRIZES!

IC-02AT  
with case  
\$329<sup>00</sup>!

NO CITY SALES TAX!  
WAREHOUSE PRICES!  
WE SHIP DAILY NATIONWIDE.

SATURDAYS TIL 3  
**288 - 7373**

525 E. 70th Suite 1W  
DENVER, CO 80229

NEXT TO VALLEY HIGHWAY  
1 MILE NORTH OF MERCHANDISE MART

# MILEY'S RADIO

Jess KØTAA 719 W. 7th St. Florence, Colorado 81226 784-3040  
Hours 8 to 6 Tuesday through Friday — Saturdays 8 to 12 — Evening Hours 7:30 to 10 (Call Ahead)  
Closed Saturday PM, Sunday & Monday

## NEW EQUIPMENT IN STOCK

### FACTORY REBATES ON SOME KENWOOD EQUIPMENT UNTIL 11/15

New Kenwood TS 440S \$899 w/AT installed \$1010 - \$50 factory rebate  
Kenwood TS 940S \$1725 w/auto tuner \$1875  
Kenwood TS 430S \$699-\$25 Factory Rebate  
Kenwood TS 830S \$939  
PS 430 Power Supply \$155 — PS 30 \$145  
Kenwood PS 50 power supply \$193  
Kenwood AT 250 auto antenna tuner for 430S \$299  
Kenwood AT 130 tuner \$149 AT 230 Tuner \$199  
Icom 735 \$845  
Icom 745 \$885  
New Yaesu 767GX goes everywhere, does everything \$1575  
Yaesu FT 757GX \$270 - 2 only  
Kenwood 4000A 2m & 440 FM Xcvr Sale \$499  
Kenwood TR 3600 440 MHz HT \$319 - \$15 Factory Rebate (1 only)  
Kenwood TR 2600A new HT w/extra battery \$315 - \$15 Factory Rebate  
New Kenwood TR 751A 2 meter all mode w/GaFet preamp \$508  
Kenwood TH21AT \$215 TH41AT \$239 - both with free extra battery and \$10 Factory Rebate  
Kenwood TM 2570A 70 watt 2 meter FM mobile \$479-\$40 Factory Rebate  
Kenwood TM 2550A 45 watt 2 meter FM mobile \$395  
Kenwood TM 2530A 25 watt 2 meter FM mobile \$365  
Santer 201 w/2 number memory dialer \$275 w/additional \$10 factory rebate  
Complete line of Tokyo High Power amps, preamps & tuners at lowest prices  
New Azden PCS 5000 \$299 (will double as police scanner)  
New Icom 40A 440MHz \$395  
New Icom 28A 132-174 MHz scan/receive 25W \$375  
New Icom 28H same specs as Icom 28A w/45W \$395  
Icom 2AT HT \$258  
Icom 02AT \$330  
Icom 4AT \$293  
Icom 04AT \$379  
Icom 27A w/TTM \$369/Icom 27H w/TTM \$389  
Icom 47A \$469  
Icom 3200A 2 meter/440 dual bander \$489 (2 only)  
New Models of Kenwood, Icom, Yaesu HT's due mid November  
Daiwa Meters, Switches & Rotors - In Stock  
Mirage Amps - Low Prices - In Stock  
New KDK FM 240 mini 25W w/TTM & LCD display, encoder/decoder 10 156 MHz receive \$320 w/o tone \$290  
New Yaesu FT 209RH 3 watt FM HT \$289  
Yaesu FT 2700RH 2 m-70 cm dual bander full duplex \$489 (2 only)  
Now a factory dealer for Ten Tec — In stock specials:  
Consist H HF xcvr \$1149  
Century 22 HF CW xcvr \$349  
**Special of the Month**  
New Ten Tec TT920 Air Band HT 108-136 MHz AM \$375  
New generation Ten Tec 2191 2 m HT \$269, 1 demo unit \$250  
Astron PS — ALL AMPS — Low Prices — Astron RS 50 and V50 In Stock  
**Now a factory dealer for Mosley antennas—Special prices until 11/30—all line in stock.**  
Butternut HF6V 80-10 mtr. vertical \$115, Butterfly beam \$175  
B&W AX5 160 shortened 160/30 mtr. dipole 95' long \$94  
B&W AX5 80 shortened 80/40/15 mtr. dipole 64' long \$94  
B&W AS 80 shortened 80/40/20 mtr. dipole 76' long \$94  
Welz test meters in stock - all power levels and frequencies  
New B & W V5 300 tuner-best 300W tuner for the price! Special \$84  
Amp Supply LA 1000A 1000W PEP amp—Special \$415  
Amp Supply AT 1200 Tuner Special \$190  
Now a distributor for American Amplifiers — All 80A-1 3-3002 — In Stock \$649  
AEA CP1/64 MBA Test Pac \$210  
AEA PK 232 data controller (internal HF/VHF modem \$305  
AEA CR-1 Computer Interface \$178  
AEA PK 64 packet/cw/rty etc. controller \$200 — HFM \$95  
AEA PK 64 system w/HFM 64 installed \$310  
**Factory Dealer for Kantronics — In Stock!**  
Kantronics KPC 1 Level 2 - special sale \$135 - 3 only  
New Kantronics Packet Program—includes program for LTL

Kantronics KPC 2 Packet Controller version 2 w/HFM \$175  
Kantronics interface for VIC 20 and others \$125  
Kantronics Universal Terminal Unit \$185  
Kantronics Hamtest Hamsoft \$89  
Coming in November—Kantronics KAM all mode controller—  
CW/RTTY/ASCII/AMTOR or Packet \$295 (HF & VHF Packet)  
MFJ wet & dry dummy loads — In stock  
MFJ Tuners and Keyers — In stock  
MFJ 989 roller inductor tuner \$288  
MFJ 962 1.5 KW tuner-160 to 10 meters \$279  
New MFJ 1224 interface in stock w/free soft program Fall Sale—\$75  
MFJ 1229 interface w/free soft program Fall Sale—\$155  
In Stock!  
MFJ 1270 packet controller (TNC-2) \$120

## USED EQUIPMENT

Kenwood TR 2600 w/2 batteries \$250  
Kenwood TR 9130 2 meter all mode mobile - Nice - \$395  
Kenwood TR 2400 - nice - \$115  
Kenwood TS 820 CW filter \$450  
AT 200 Tuner \$95  
AT 210 Tuner \$195  
Kenwood TS 430S-CW, 55B filters, FM, NB and QSK mods-will operate AMTOR \$620  
Kenwood TS711A mini condition \$700  
Kenwood TS 530S \$450  
Kenwood TS 520 \$350  
Kenwood TS 520S \$350  
Kenwood ST1 desk power supply/charger for TR 2400 \$35  
Kenwood AT 250 auto tuner \$250  
Icom 740 \$475  
Icom PS 20 p.s. \$120  
(IC 740 & PS 20 combo for \$585)  
Azden PCS 4000 25W mobile FM \$225  
Tempo 515 w/new extra battery \$175 Tempo ST \$95. 68 \$110  
KDK 2030 25W 2 meter FM \$175  
Icom 735- CW filter and keyer \$700  
Icom 02AT \$275  
Icom 02AT w/mod \$300  
Yaesu FT708R 20 cm HT \$200  
Yaesu FT757 HD \$195  
Yaesu 757AT auto tuner \$195  
Yaesu FT 107E \$350  
Yaesu FT 107B \$300  
Yaesu FT 107B ext. VFO \$75  
Yaesu FL2100R used, mint \$325  
Daiwa CNA 2002 2.5 KW PEP autotuner \$250  
Mirage B108 2 meter FM/55B amp - HT or 10W in/80 out \$125  
AEA CP1/64 w/MBA TestPac \$100  
(2) Heath 2 meter amps-2/10 or 10/40 tuneable \$25 each  
Heath SB110 6 meter 100W ssb/cw w/p.s. and 3 el. Hygain beam \$125  
Drake W4 wattmeter \$39  
**Wide selection of amateur antennas—base, mobile, HF, VHF, UHF at reduced prices. We stock most of the better antenna companies products.**  
We carry a complete selection of books by ARRL, Ameco, and the Callbook.  
New 86 ARRL Handbooks - list \$18 - sale \$17. Limited qty.  
Special - 86 Callbooks w/tone supplement \$31.95 value—\$25.00  
"We handle anything electronic and love to trade"  
Much more used & consignment gear — call for info  
11/86

## Membership Application PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.

P.O. Box 16521  
Colorado Springs, CO 80935

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Call \_\_\_\_\_ License Class \_\_\_\_\_

Are You An ARRL Member? ☐ Yes ☐ No Telephone \_\_\_\_\_

☐ Full Member \$12.00 ☐ Family Membership \$15.00 ☐ Newsletter Only \$4.00

☐ Age 65 or older, or under 18 \$8.00

Additional Names \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_

Associate Member \$8.00 ☐ (Outside Teller & El Paso Counties.)